CHAPTER 3A

SRU-41/P22P-20 SURVIVAL EQUIPMENT KIT BAG ASSEMBLY

Section 3A-1. Description

3A-1. GENERAL.

3A-2. The SRU-41/P22P-20 Liferaft and Survival Kit Bag is designed for use with E-2C aircraft as part of the A/P22P-20 Crew Backpack Assembly (figure 3A-1). The A/P22P-20 crew backpack assembly functions as a backrest for the aircrewmember, a container for the parachute assembly, a container for the emergency oxygen system, and a container for the liferaft and survival items. The SRU-41/P22P-20 Survival Kit Bag, P/N 351AS4000-1, is manufactured by Simula Safety Systems Inc, SEI Division/CAGE 05DK2.

NOTE

This chapter contains maintenance, inspection, and repair procedures for the SRU-41/P22P-20 only. Also included are Survival Kit Bag rigging and packing instructions, including installing the LRU-29/P22P-20 liferaft into the container. Refer to NAVAIR 13-1-6.2 for parachute information and to NAVAIR 13-1-6.4 for the E-2C emergency oxygen system. Refer to NAVAIR 13-1-6.1-1 for description and maintenance procedures for the LRU-29/P22P-20 liferaft.

3A-3. CONFIGURATION.

3A-4. The SRU-41/P22P-20 Liferaft and Survival Kit Bag (figure 3A-2) consists of a vacuum-sealed LRU-29/P22P-20 One-Man Liferaft Assembly, made up of an LRU-16 Liferaft, an FLU-10 Zero Leak Inflator, and a Survival Kit Bag Assembly. The survival kit contains the components listed in table 3A-1.

3A-5. SUBASSEMBLIES. The major subassemblies of SRU-41/P22P-20 are:

1. Survival kit bag assembly.
2. LRU-29 liferaft.

3A-6. REFERENCE NUMBERS, ITEMS AND SUPPLY DATA.

3A-7. Figures 3A-3 and 3A-4 contain information on each assembly, subassembly and component part for each SRU-41/P22P-20. The figure and index number, reference or part number, description and units per assembly are provided.

3A-8. APPLICATION.

3A-9. The SRU-41/P22P-20 Survival Kit Bag is part of the survival equipment included with the A/P22P-20 Crew Backpack Assembly used by aircrewmembers aboard E-2C aircraft.

3A-10. FUNCTION.

3A-11. The SRU-41/P22P-20 is not designed to be used independently of the A/P22P-20 crew backpack assembly. Refer to NAVAIR 13-1-6.2 for function of the entire system.

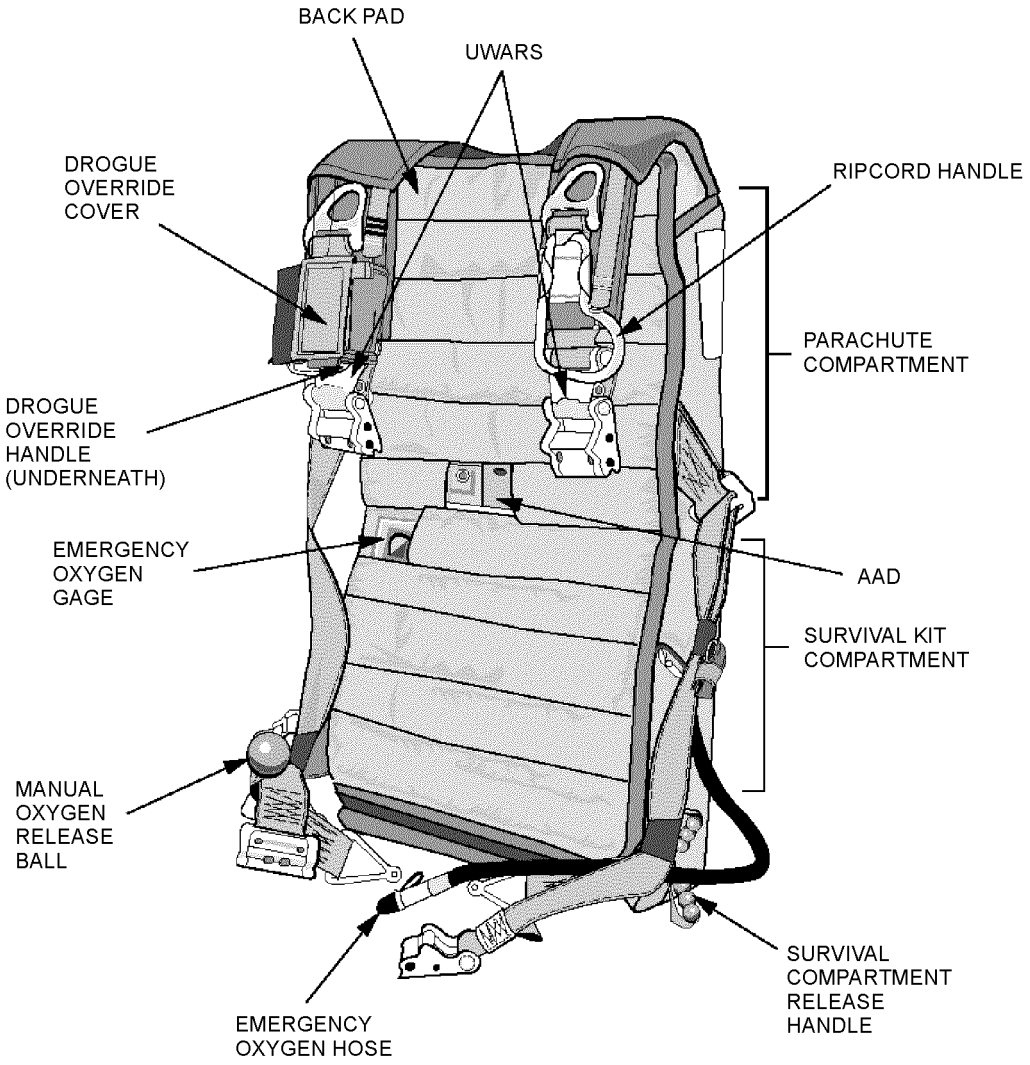

Figure 3A-1. A/P22P-20 Crew Backpack Assembly

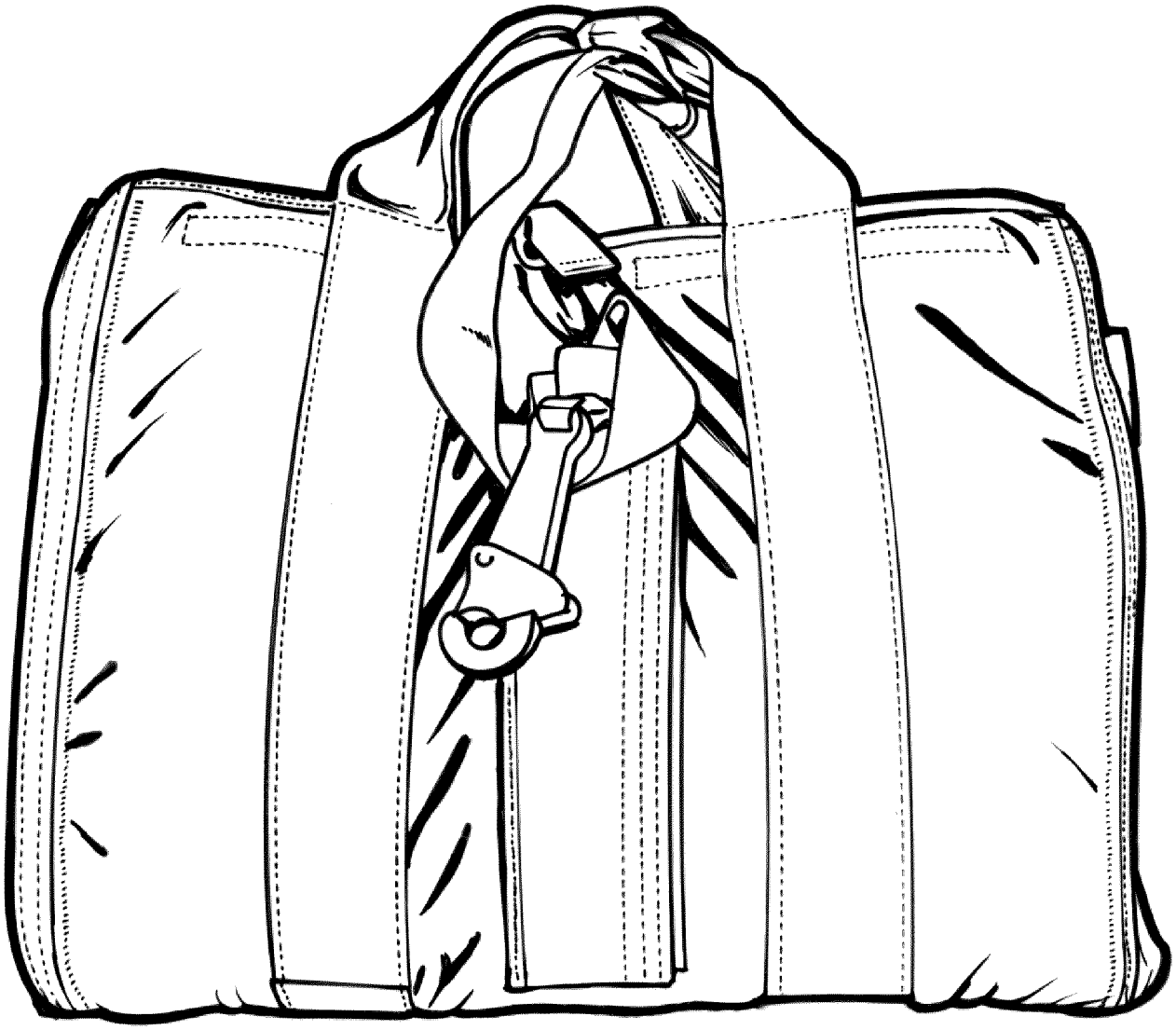

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Figure 3A-2. SRU-41/P22P-20 Liferaft and Survival Kit Bag

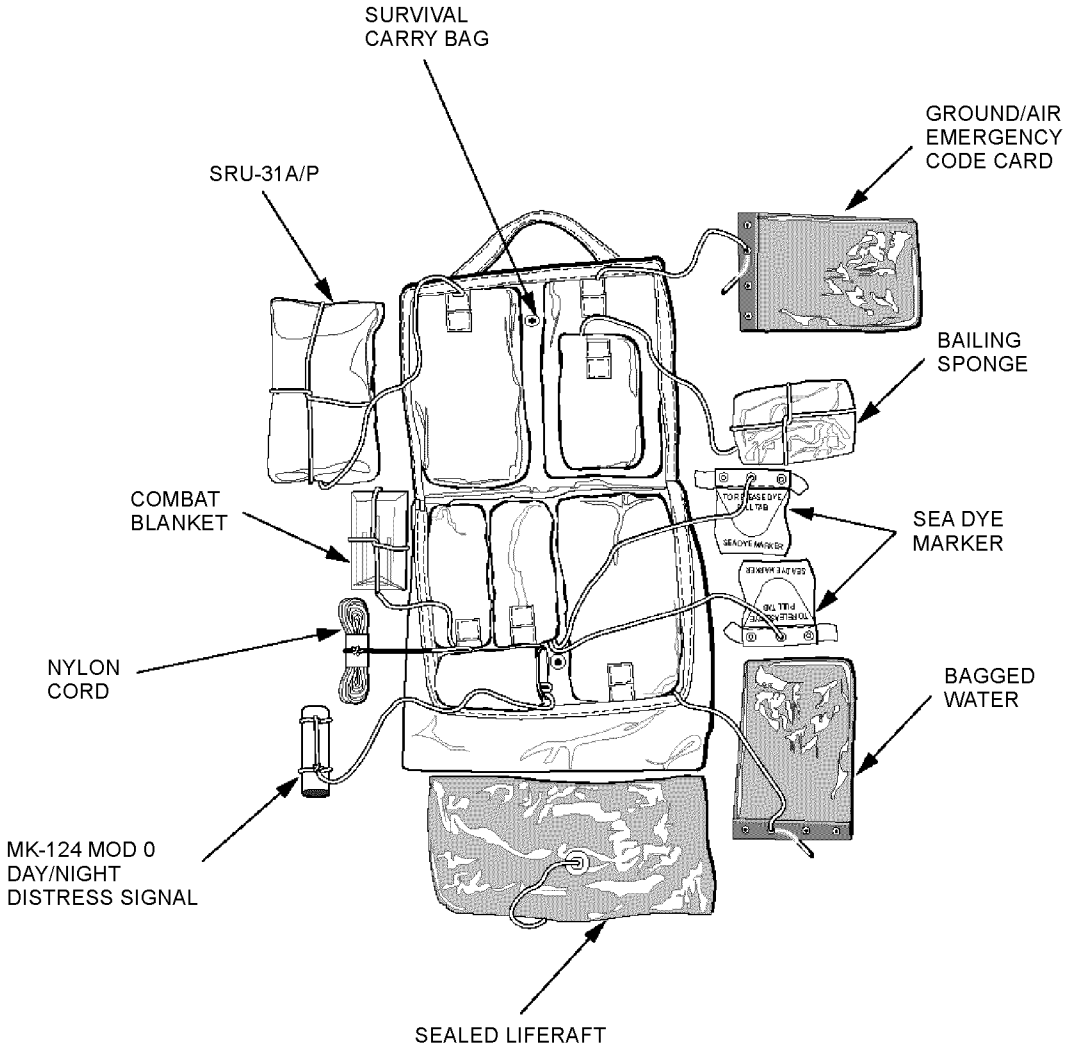

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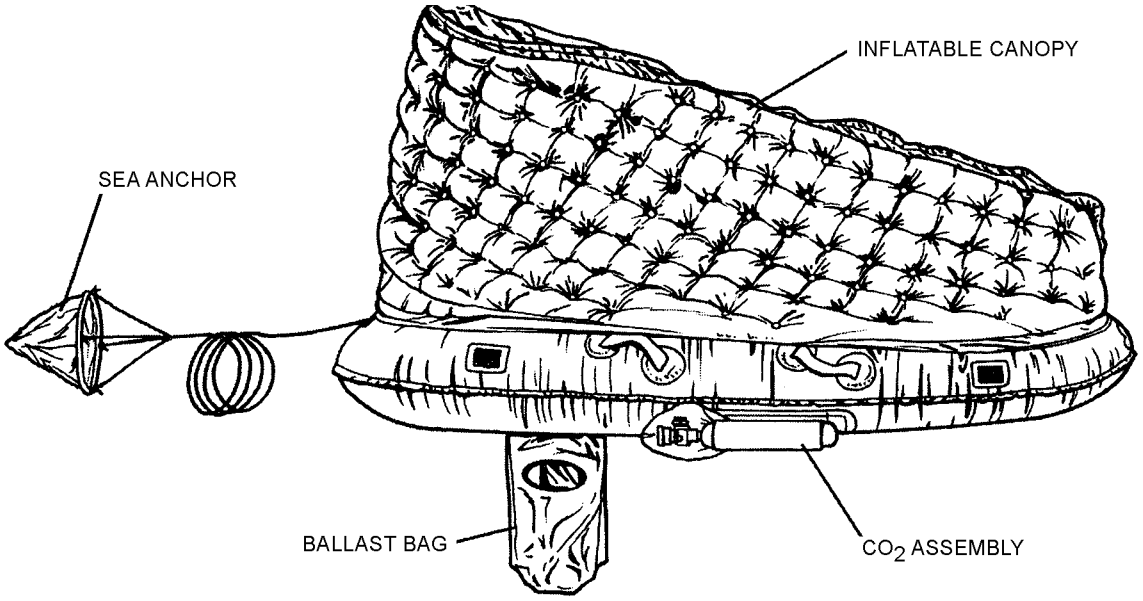
Figure 3A-3. SRU-41/P22P-20 Survival Equipment Compartment



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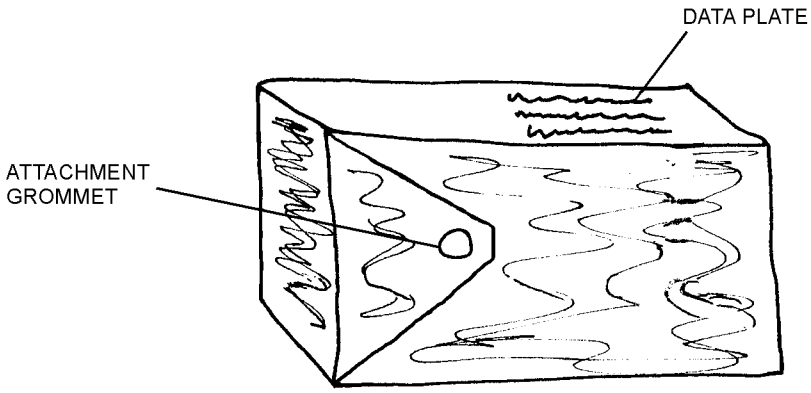

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Figure 3A-4. LRU-29/P22P-20 Liferaft

Section 3A-2. Modifications

3A-12. GENERAL.

3A-13. There are no modifications to the SRU-41/P22P-20 required/authorized at this time.

Section 3A-3. Rigging and Packing

3A-14. GENERAL.

3A-15. Unless operational requirements demand otherwise, rigging and packing of the SRU-41/P22P-20 survival equipment kit bag shall be accomplished at Intermediate Levels of maintenance by qualified personnel.

NOTE

Quality assurance steps are provided for critical operations when a step is underlined, the Aircrew Survival Equipmentman shall perform the operation and then have performance verified by Quality Assurance (QA).

3A-16. SURVIVAL EQUIPMENT BAG RIGGING, PACKING AND CLOSURE.

3A-17. To install the LRU-29 liferaft in the SRU-41 survival kit and close the survival kit bag, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Cord, Nylon, Type III	MIL-C-5040

1. Position survival kit bag in the open position.

2. Route the free end of the bridle cord through the loop, and pull cord tight forming a lark's head knot.

3. Position sealed liferaft so grommet and external bridle cord are up and CO_2 bottle side of sealed liferaft assembly faces outboard. Install sealed liferaft assembly into raft pocket, bottle end last.

4. Fold the survival kit side of the kit bag over so that it is on top of the liferaft.

5. Locate loops and pass lanyard loop through bridle loop.

6. Route the loop end of the liferaft lanyard through the liferaft bridle cord and survival equipment handle.

7. Pass the hook end of the liferaft external lanyard through the lanyard loop, and pull lanyard all the way through and tighten to form a lark's head knot.

8. Stow excess liferaft bridle cord inside liferaft pocket by S-folding and placing on top of raft. Close liferaft flap and mate hook and pile tape. Liferaft bridle cord shall exit to the right of center hook and pile tape attachment.

9. Cut a 36-inch length of nylon cord and remove inner strands to make a pull up cord.

10. Unzip survival compartment to the corners. Place a pull-up cord through the closing loop of the liferaft pocket side, and pull free ends of pull-up cord through both grommets of the survival equipment side of the kit bag.

11. Using the pull-up cord, pull the closing loop through both grommets, slide the curved pin on the liferaft external lanyard through the locking loop, toward equipment bag handles and remove pull-up cord. Zip compartment closed.

12. S-fold the liferaft lanyard in 6-inch bights, with first bight located at the bottom of the lanyard flap and stow inside of the lanyard flap on the outside of the kit bag until the end of the hook is even with the lanyard flap.

13. Tack lanyard flap to bag in upper corner of velcro with one turn E thread, tie off with surgeon's and square knot.

3A-18. SURVIVAL EQUIPMENT BINDING. To bind survival items, proceed as follows (table 3A-1):

NOTE

To prevent loss of survival items, tie items individually and then tie to SRU-41/P22P-20 survival equipment compartment. Nylon cord of prescribed lengths required for this procedure shall be seared at both ends to prevent fraying (table 3A-2). Secure all S-folded retaining cord using a rubber band.

Survival items shall be stowed in a neat and orderly fashion and the items shall be arranged to prevent a distorted pack.

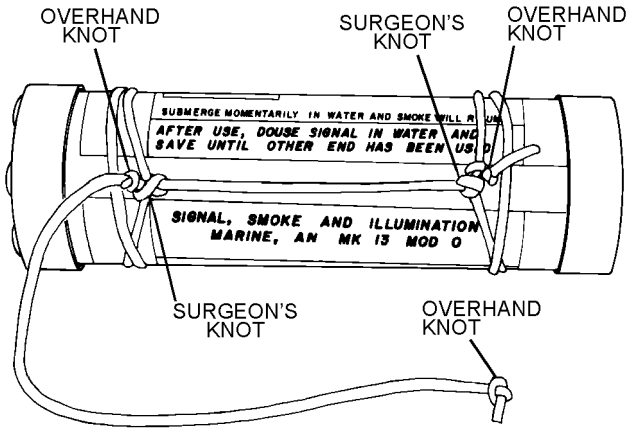
Materials Required

Quantity	Description	Reference Number
As Required	Rubber Bands	NSN 7510-00-285-1787
As Required	Vinyl Envelope	NSN 8105-00-334-4120
As Required	Cord, Type 1A	MIL-C-5040
As Required	Thread, Nylon, Type I/II, Class A, Size E	V-T-295

1. Using a 30-inch piece of nylon cord, tie an overhand knot in each end. Wrap end of cord two turns around one end of a MK 124 MOD 0 signal flare and tie with a surgeon's knot. Turns of cord shall overlap and all knots shall be positioned snugly against each other.

2. Route cord to opposite end of signal flare and tie in the same manner as step one. The cord between ties shall be drawn tightly.

3. Attach the other end of the nylon cord to the secure loop of the pocket identified flare in figure 3A-3 using a bowline knot allowing for a 1-inch loop. Store MK124 in pocket. S-fold excess cord and store in pocket with item Secure hook and pile fastener.



Step 3 - Para 3A-18

4. Using a 30-inch piece of nylon cord, tie an overhand knot near each end. Pass overhand knot through center grommet in dye marker and tie a bowline knot, allowing approximately a 1-inch loop. Bowline knot shall lie snugly against overhand knot.

Step 4 - Para 3A-18

5. Attach the other end of the nylon cord to the secure loop of the pocket identified sea dye marker in figure 3A-3 using a bowline knot allowing for a 1-inch loop.

Table 3A-1. Survival Kit Equipment (Note 1)

Item Name	Quantity	Reference Number
Nylon Cord, Type I	50 ft	NAVAIR 13-1-6.5
Day/Night Distress Signal, MK-13 MOD 0 or MK-124 MOD 0	1	NAVAIR 13-1-6.5
Sea Dye Marker	2	NAVAIR 13-1-6.5
Bailing Sponge, Type II, Class 2	1	NAVAIR 13-1-6.5
SRU-31A/P (Note 2)	1	NAVAIR 13-1-6.5
Bagged Water, Drinking	3	NAVAIR 13-1-6.5
Envelope, Packing List	1	NAVAIR 13-1-6.5
Ground/Air Emergency Code Card	1	NAVAIR 13-1-6.5
Combat Casualty Blanket	1	NAVAIR 13-1-6.5
Tourniquet	1	NAVAIR 13-1-6.5

Notes:
1. The items listed are typical and are considered mandatory for inclusion in the survival kit container. Deviation from the listed items may be required by certain Functional Air Wings (FUNCWINGS), Carrier Air Wings (CVW), COMFAIRS, or Marine Air Wings (MAW). Requests for deviations must be forwarded to and authorized by TYCOMS and with information to Fleet Support Team (FST) at NAVAIRWARCENACDIV Patuxent River MD via Naval Message. When optional items are substituted, particular attention must be paid to the binding sequence so that physical sizes and binding order of substituted items remain approximately the same. That portion of an item name in parentheses is a common-use name or container size and is not intended for supply requisition purposes.
2. For contents of the SRU-31A/P Individual Aircrewmember's Survival Kit reference NAVAIR 13-1-6.5, for detailed information.

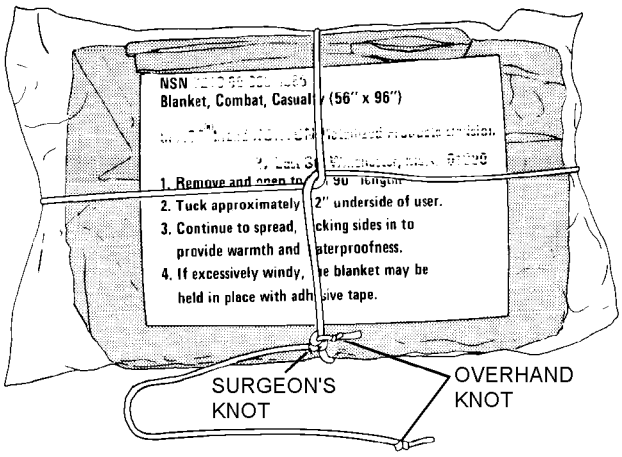
Table 3A-2. Nylon Cord Lengths Required for Binding

Length (Inches)	No. Required
12	2
24	1
30	4
36	1

Notes:
1. Only authorized water bags are to be used in accordance with table 3-1 and NAVAIR 13-1-6.5 technical manual.
2. All items shall be tethered using a bowline knot followed by an overhand knot.

6. Tie second dye marker in the same manner as steps 3 and 4. Store sea dye markers in the pocket identified sea dye marker in figure 3A-3. S-fold excess cord and store in pocket with item. Secure hook and pile fastener.

7. To secure the combat casualty blanket, tie an overhand knot near each end of a 24-inch piece of nylon cord. Wrap cord around blanket until cord ends meet, then rotate cords 1/4 turn and wrap cords around opposite sides of blanket. Tie with a surgeon's knot. Attach the other end of the nylon cord to the secure loop of the pocket identified blanket in figure 3A-3 using a bowline knot allowing for a 1-inch loop. S-fold excess cord and store in pocket with item. Secure hook and pile fastener.



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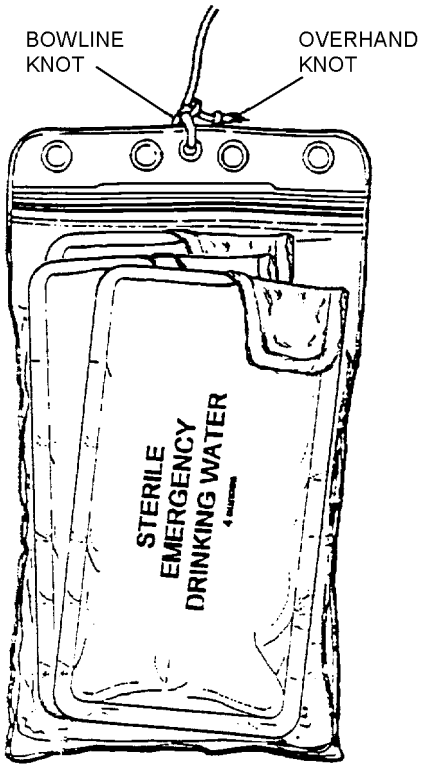
Step 7 - Para 3A-18

8. To secure bagged emergency water, place 3 bagged emergency drinking water flat inside a clear vinyl envelope (MIL-B-117) with pour spout folded down. Bagged water must be able to fit into an envelope without disrupting the closure of the sealing slide fastener. Using a 30-inch length of cord, tie an overhand knot on each end and pass knot through center hole in envelope. Secure with bowline knot, allowing an approximate 1-inch loop. Attach the other end of the nylon cord to the secure loop of the pocket identified water in figure 3A-3 using a bowline knot allowing for a 1-inch loop. S-fold excess cord and store in pocket with item. Secure hook and pile fastener.



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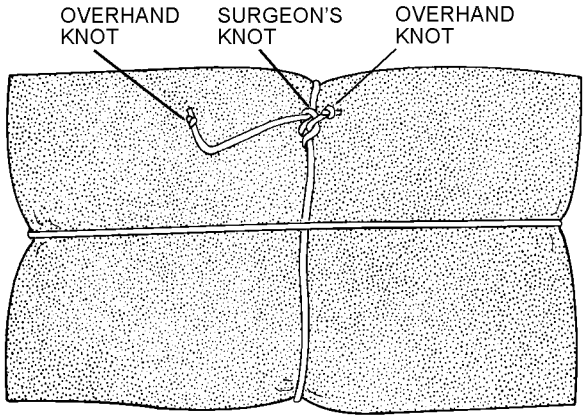
Step 8 - Para 3A-18

NOTE

The bailing sponge should be compressed to a minimum thickness while damp and then allowed to dry in the compressed state before tying.

9. Using a 30-inch length of nylon cord, tie an overhand knot near ends. Wrap cord around sponge until cord ends meet, then rotate cords 1/4 turn and wrap cords around opposite sides of sponge. Tie with a surgeon's knot. Attach the other end of the nylon cord to the secure loop of the pocket identified bailing sponge in figure 3A-3 using a bowline knot allowing for a 1-inch loop. S-fold excess cord and store in pocket with item. Secure hook and pile fastener.



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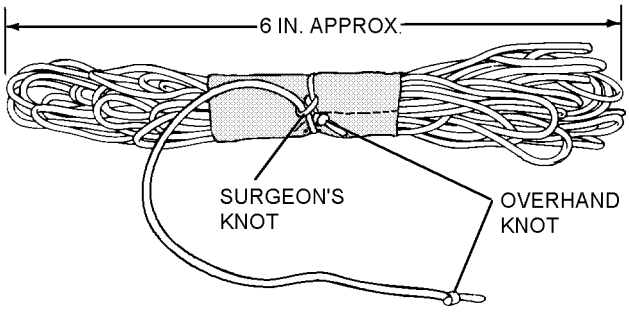
Step 9 - Para 3A-18

10. Cut one 2 x 3-inch piece of nylon duck material. Accordion-fold 50-foot length of Type I or IA nylon cord in 6 inch bights, and wrap material around center of folded cord. Using a 12-inch piece of nylon cord, tie an overhand knot near each end and secure one end of cord to center of material with a surgeon's knot. Attach the other end of the nylon cord to the secure loop of the pocket identified nylon cord in figure 3A-3 using a bowline knot allowing for a 1-inch loop. S-fold excess cord and store in pocket with item. Secure hook and pile fastener.



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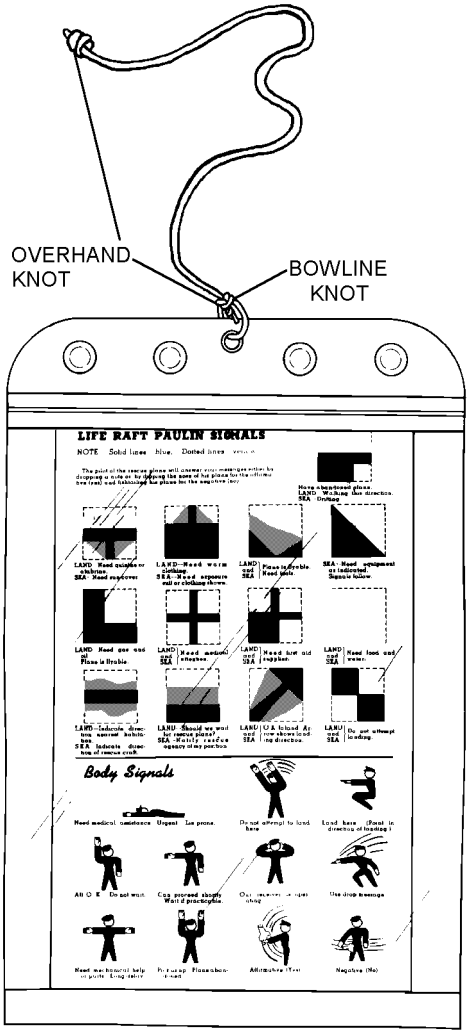
Step 10 - Para 3A-18

11. Place ground/air emergency code card into clear vinyl plastic envelope (MIL-B-117) and close sealing zipper. Using a 24-inch length of nylon cord, tie an overhand knot near each end and pass knot through center hole in envelope. Secure with bowline knot, allowing a 1-inch loop. Attach the other end of the nylon cord to the secure loop of the pocket identified ground/air emergency code card in figure 3A-3 using a bowline knot allowing for a 1-inch loop. S-fold excess cord and store in pocket with item. Secure hook and pile fastener.



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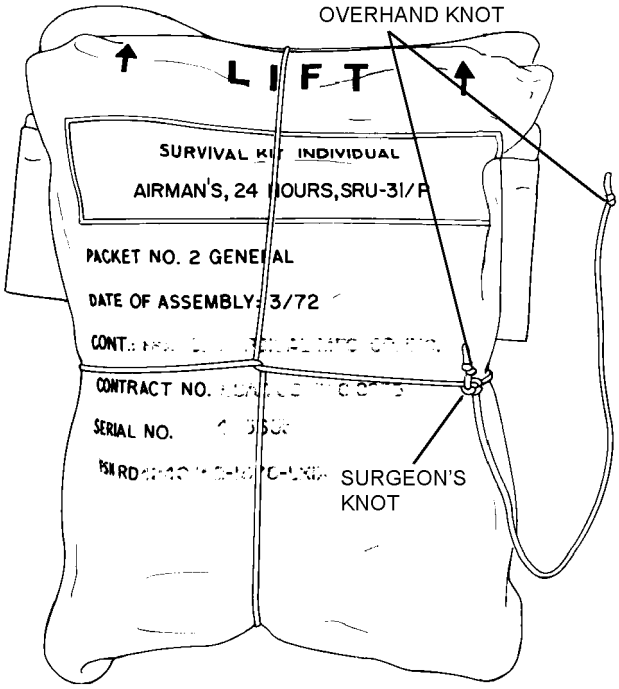
Step 11 - Para 3A-18

12. Using a 36-inch length of nylon cord, tie an overhand knot in both ends. Wrap cord around SRU-31A/P survival kit until cord ends meet, then rotate cords 1/4 turn and wrap cords around opposite sides of packet. Tie with a surgeon's knot. Attach the other end of the nylon cord to the secure loop of the packet identified SRU-31A/P survival kit in figure 3A-3 using a bowline knot allowing for a 1-inch loop. S-fold excess cord and store in pocket with item. Secure hook and pile fastener.



Step 12 - Para 3A-18

13. Zip survival equipment compartment closed.

Section 3A-4. Inspection

3A-19. GENERAL.

3A-20. The SRU-41/P22P-20 Survival Equipment Kit Bag Assembly shall be subjected to the following inspections: Acceptance, Place-In-Service, Daily/Turn-around, Special 14-Day, Special 448-Day, and Special 1792-Day (Repack/Overhaul).

NOTE

Quality assurance steps are provided for critical operations when a step is underlined, the Aircrew Survival Equipmentman shall perform the operation and then have performance verified by Quality Assurance (QA).

3A-21. INSPECTION PROCEDURES.

3A-22. The Place-In-Service inspection shall be performed on all new assemblies, or assemblies returned from vendor repair or overhaul. The AIMD performs this inspection.

3A-23. The Daily/Turnaround inspection is performed on aircraft installed assemblies, in accordance with aircraft MRC requirements.

3A-24. The 14-Day Special Inspection shall be accomplished at the organizational level.

3A-25. The 448-Day Special Inspection shall be accomplished at the AIMD.

3A-26. The 1792-Day Special Inspection (Repack/Overhaul) will be accomplished by AIMD and the vendor designated to perform the repack/overhaul. AIMD will forward the LRU-29A/P22P-20 to the designated vendor. AIMD may install a spare raft to RFI the backpack assembly and place the overhauled liferaft in the ALSS Pool upon its return from the vendor.

3A-27. All liferafts shall be subjected to Phase/Isochronal/Special Inspections prior to placing in service or, if an aircraft inventory item, at the time of the aircraft Acceptance Inspection. Thereafter the inspection interval shall coincide with the aircraft inspection cycle in which the equipment is installed. See the applicable aircraft maintenance instruction manuals or MRCs.

3A-28. ACCEPTANCE INSPECTION. Acceptance Inspection shall be accomplished during the aircraft inventory and include inspection of the SRU-41 at the time the A/P22P-20 Crew Backpack Assembly is received by an activity. In this case, the records concerning the crew backpack shall be examined.

3A-29. VISUAL INSPECTION. The visual inspection shall be performed prior to packing of liferaft and survival items, for rips, cuts, wear, contamination, damage, moving parts for ease of operation, handles and hardware for security of attachment and general condition.

3A-30. PLACE-IN-SERVICE INSPECTION. To perform the Place-In-Service Inspection, proceed as follows:

1. The A/P22P-20 Crew Backpack Assembly is received from the manufacturer assembled and ready to be placed in the aircraft. The Place-In-Service Inspection consists of a visual inspection of the assembly and a records check to ensure all data is entered on the history records. If there are no discrepancies discovered during the visual or records inspection the A/P22P-20 can be placed in service. If discrepancies exist that require the opening of the Survival Kit, refer to paragraph 3A-33 of this manual and OPNAVINST 4790.2 Series.

CAUTION

Do not use sharp objects in the vicinity of the SRU-41/P22P-20 to prevent damage to the survival equipment and/or LRU-29/P22P-20 liferaft. Ensure the surface where you place the liferaft is smooth and free of splinters. Liferafts that have lost vacuum must be returned to the vendor for rework.

3A-31. 14-DAY AND 448-DAY SPECIAL INSPECTION. To perform a 14-Day or 448-Day Special Inspection, proceed as follows:

CAUTION

Do not open the assembly for this inspection, break any seals or safety ties. This is a visual inspection only.

1. Inspect the A/P22P-21 assembly for obvious defects, torn stitching, corrosion, stains, cuts, tears, deterioration and abrasion.

2. Inspect liferaft retaining lanyard for proper stowage, corrosion, contamination, wear or other damage.

3A-32. 1792-DAY SPECIAL INSPECTION (REPACK/OVERHAUL). To perform the 1792-Day Special Inspection, proceed as follows:

1. Inspect liferaft in accordance with NAVAIR 13-1-6.1-1.

2. Inspect survival equipment container and equipment in accordance with paragraph 3A-33.

3A-33. INSPECTION OF SURVIVAL EQUIPMENT KIT BAG ASSEMBLY AND LANYARD ASSEMBLY.

1. Remove survival equipment items and inspect in accordance with NAVAIR 13-1-6.5.

NOTE

Survival items reaching overage while packed in survival kits and raft shall remain in service until the next inspection cycle of the completed assembly.

Survival items shall remain tied to the container unless a replacement of an item or a retaining cord is required.

Length of retaining cords shall be measured with items tied to container. For length of retaining cord, refer to table 3A-2.

2. Inspect retaining cord for damage. Replace in accordance with table 3A-2 and paragraph 3A-18.

3. Inspect the survival kit bag and side shoulder carrying strap hardware, webbing, hook and pile fasteners for contamination, cuts, tears, corrosion, zipper for proper operation or damaged zipper chain and/or other damage and then restow shoulder carrying strap.

4. Inspect outer nameplate to contain the following:

a. SRU-41/P22P-20

b. Survival Equipment Kit Bag Assembly

c. PN: 3516AS4000-1

d. DA CAGE: 30003

e. MFG CODE: 05DK2

f. CONTRACT: NXXXXX-XX-X-XXXXX (Example: N68936-98-D-0077)

g. DOM: Mon/Yr (Example: 12/99)

5. Inspect inner name plate to contain the following:

a. SURVIVAL CARRY BAG

b. PN: 3516AS4100-1

c. MFG CODE: 05DK2

d. CONTRACT: NXXXXX-XX-X-XXXX (Example: N68936-98-D-0077)

e. DOM: Mon/Yr (Example: 12/99)

Section 3A-5. Maintenance

3A-34. GENERAL.

3A-35. This section contains procedures for disassembly, cleaning, and inspection of disassembled parts, and repair or replacement of parts for the SRU-41/P22P-20 liferaft and survival kit container.

3A-36. DISASSEMBLY.

3A-37. To disassemble the SRU-41/P22P-20 container, proceed as follows:

CAUTION

When opening the SRU-41/P22P-20 survival kit container, be careful not to inadvertently actuate LRU-29/P22P-20 liferaft by pulling on the bridle cord.

1. Remove curved pin and slowly unfold SRU-41/P22P-20 survival bag assembly.

2. Remove yellow liferaft retaining lanyard from SRU-41/P22P-20 survival kit container.

3. Remove white liferaft bridle cord from liferaft lanyard.

CAUTION

Do not use sharp objects in the vicinity of the SRU-41/P22P-20 to prevent damage to the survival equipment and/or LRU-29/P22P-20 liferaft. Ensure the surface where you place the liferaft is smooth and free of splinters. Liferafts that have lost vacuum must be returned to the vendor for rework.

4. Remove liferaft and inspect liferaft in accordance with NAVAIR 13-1-6.1-1.

CAUTION

Do not use sharp objects in the vicinity of the vacuum-sealed LRU-29/P22P-20 liferaft. Ensure the surface where you place the liferaft is smooth and free of splinters. Do not lift the liferaft by the grommet or tear strip as it may open tear the vacuum seal at the initiator cuts. Liferafts that have lost vacuum must be returned to the vendor for rework.

5. Inspect Survival Equipment Kit Bag and Lanyard Assembly in accordance with paragraph 3A-33.

6. Inspect Survival Equipment in accordance with NAVAIR 13-1-6.5 and table 3A-2.

3A-38. CLEANING.

3A-39. To clean the SRU-41 container, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Cleaning Compound	MIL-L-25769
As Required	Detergent, General Purpose	MIL-D-16791
As Required	Lint-free Cloth	MIL-C-85043 NIIN 00-044-9281

1. To clean the survival kit bag of dust and dirt, wipe with a damp cloth. If areas are soiled with grease or oil, moisten cloth with general-purpose detergent (MIL-D-16791) before using.

2. Immediately dry with clean, lint-free cloth.

3A-40. INSTALLATION OF SURVIVAL EQUIPMENT.

1. Install survival items in accordance with paragraph 3A-18, excess retaining cord shall be S-folded and held in place using a rubber band.

2. Close survival equipment side of container and center sliders.

3A-41. REPAIR AND REPLACEMENT.

3A-42. REPAIR. Repair of individual components within any assembly is authorized only in accordance with procedures outlined in this manual. All authorized repairs performed shall be documented by making necessary entries on appropriate form in accordance with OPNAVINST 4790.2 Series.

3A-43. REPLACEMENT. All individual components that fail to pass inspection shall be replaced except where a repair procedure is indicated. Refer to source code listing (SM&R Code) in the Numerical Index of the Illustrated Parts Breakdown to aid in determining replaceable components. All adjustable components or assemblies that have failed to pass respective tests shall be readjusted to meet required specification.

Section 3A-6. Fabrication

3A-44. GENERAL.

3A-45. This section contains instructions for fabrication of tools and components that can be manufactured by local maintenance activities.

3A-46. FABRICATION PROCEDURES.

3A-47. LIFERAFT LANYARD. To fabricate a lanyard, proceed as follows:

Materials Required

Quantity	Description	Reference Number
1	Snap Hook	MS27756
118″	Webbing, Nylon Type II, 1-inch Yellow	MIL-W-4088 NIIN 00-262-1642
As Required	Thread, Nylon, Type II, Size E	V-T-295 NIIN 00-204-3884

1. Lay out webbing and position identification yarn on top before proceeding.

2. Construct a drop line in accordance with figure 3A-5.

3. Sear exposed ends of webbing.

4. All stitching shall be Type 301, ASTM-D-6193, 8 to 10 stitches per inch, and backstitch 1/2 inch minimum.

5. Use Box X stitch 1/2 inch by 2 inch.

NOTE

When fabricating lanyard, the snap hooks must be inserted on lanyard prior to doing any box stitching. Otherwise, lanyard will not go through holes in the hook.

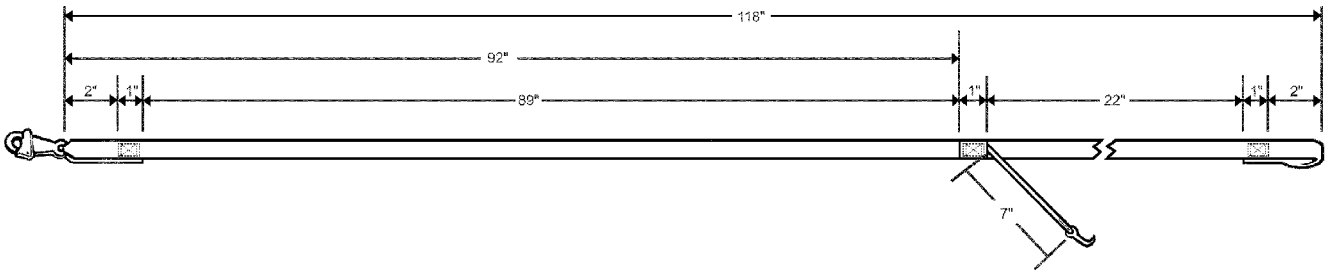


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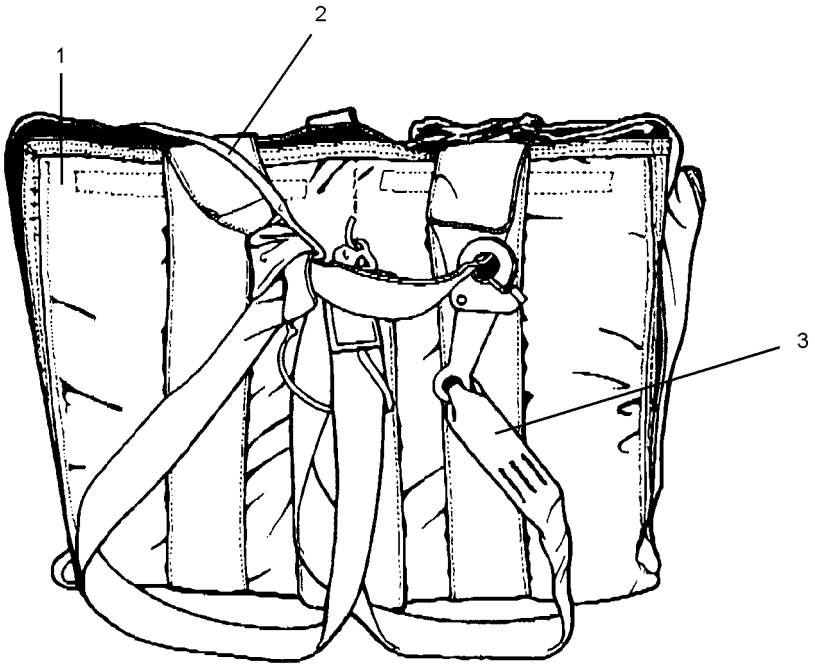
Figure 3A-5. Liferaft Lanyard

Section 3A-7. Illustrated Parts Breakdown (IPB)

3A-48. GENERAL.

3A-49. This section lists and illustrates the assemblies and detail parts of the SRU-41 Survival Kit Container Assembly (figure 3A-6).

3A-50. The Illustrated Parts Breakdown should be used during maintenance when requisitioning and identifying parts.



003a006

Figure 3A-6. SRU-41/P22P-20 Liferaft and Survival Kit Bag Assembly

Figure and Index Number	Part Number	Description 1 2 3 4 5 6 7	Units Per Assembly	Usable On Code
3A-6-	3516AS4000	LIFERAFT AND SURVIVAL KIT BAG . . . . . ASSEMBLY SRU-41/P22P-20 (30003)	REF	
-1	3516AS4100-1	. SURVIVAL KIT ASSEMBLY SRU-41 . . . . . (30003)	1	
-2	3516AS4300-1	. LIFERAFT BRIDLE CORD ASSEMBLY	1	
-3	3516AS4400-1	. LIFERAFT LANYARD ASSEMBLY	1	

NUMERICAL INDEX

Part Number	Figure and Index Number	SM&R Code
3516AS4000	3A-6	
3516AS4100-1	3A-6-1	
3516AS4300-1	3A-6-2	
3516AS4400-1	3A-6-3	